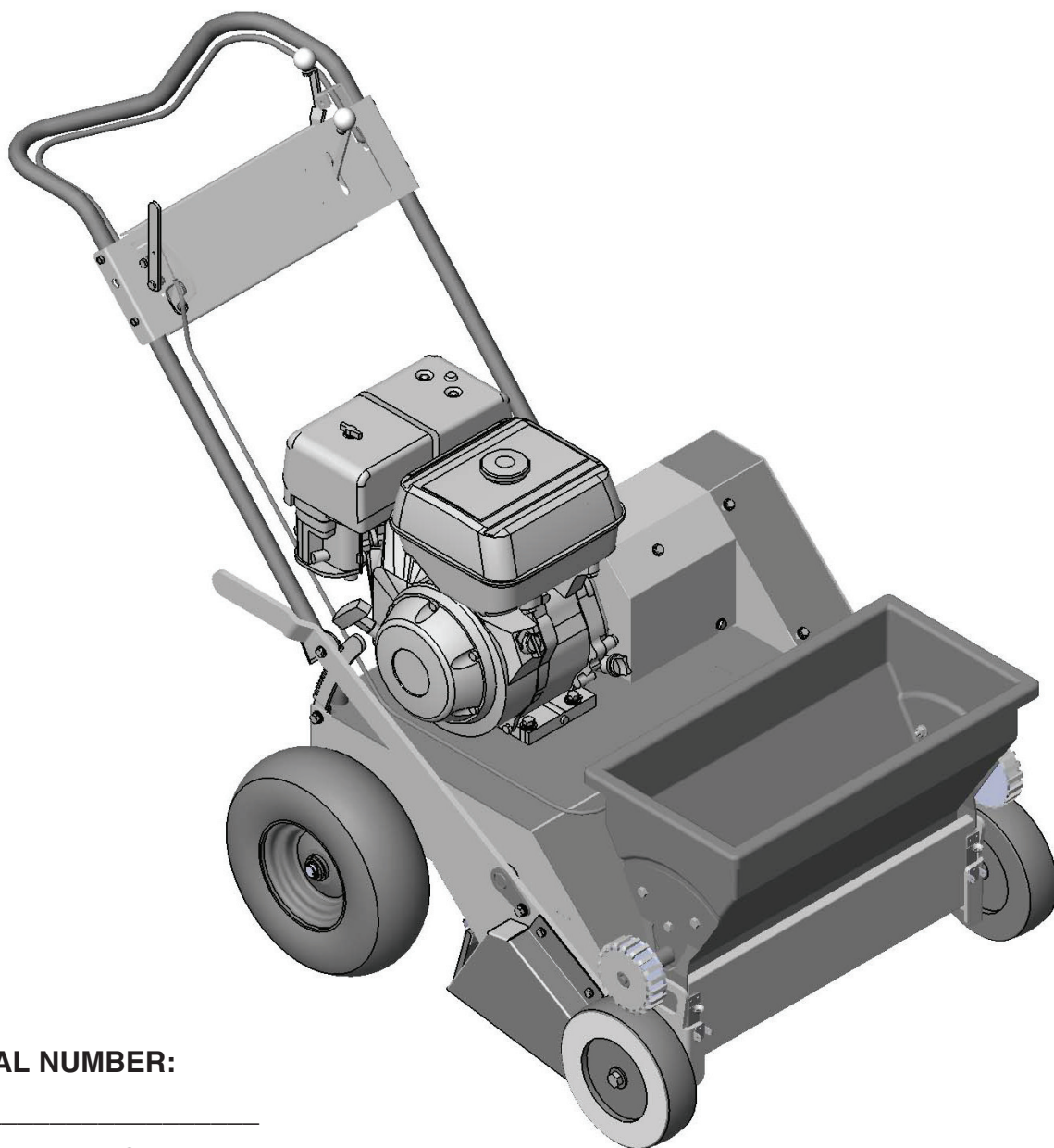




SERIAL NUMBER:

DATE PURCHASED:

INSTRUCTIONS AND PARTS MANUAL  
**TS220 TURFSAVR 22" POWER RAKE/OVERSEEDER**

# TS220 TURFSAVR 22" POWER RAKE/OVERSEEDER MANUAL

## ASSEMBLY INSTRUCTIONS

**Engine:** Engine and gear case are factory filled with high quality detergent SAE 30 oil, (SE, SF, or SG). Check level prior to operation. Please refer to the engine manual or call the engine manufacturer at the phone number listed in the engine instructions if there are any questions regarding the engine. NOTE: GASOLINE CAN BE HAZARDOUS. HANDLE GASOLINE CAREFULLY AT ALL TIMES! USE LEAD FREE GASOLINE **WITHOUT** OIL MIXED IN.

## OPERATING INSTRUCTIONS

**CAUTION! KEEP HANDS AND FEET OUT FROM UNDER MACHINE AT ALL TIMES.**

**Lower right lever:** Leave in up position to transport. Lower depth appropriately, so blades are slightly touching the surface of the ground, to dethatch or over seed. They can be moderately adjusted after initial operation. Adjust to recommended 1/8" above soil for dethatching or 1/8" below soil for overseeding.

**Bottom lever:** Start in 1st gear, and gently pull up bottom lever to start forward motion. To stop forward motion, release lever. Speed can be adjusted according to application, with 4th gear for transportation only.

**Engagement lever:** Engage blades slowly while going in forward motion. Always disengage when crossing obstacles.

**Rate control handle:** Adjust stop according to calibration chart. Open seed hopper lever if applying seed.

**To start operation:** Select 1st gear, gently lift lower handle, to start forward motion. Engage blades slowly. Open seed hopper lever. To make a turn, continue to hold bottom lever, and push down on handle, till front wheels come off of the ground, proceed to turn machine around, till going parallel to previous pass. Set front wheels back on ground, and proceed. DO NOT attempt to turn machine with all 4 wheels on the ground

**Dethatching:** For dethatching, seed hopper can be removed.

**Overseeding:** If over seeding, see attached calibration chart and set flow rate accordingly.

## MAINTENANCE INSTRUCTIONS

**Shaft bearings:** Grease both crank shaft ball bearings on the zerks provided every 100 hours of operation.

**Wheel bearings:** Grease wheel ball bearings on the zerks provided every 100 hours of operation.

**Engine oil/filter:** See engine manufacturer's instructions. Change oil and filter at least once a season per engine manual.

**Decals:** All safety decals are available for replacement at no cost. Do not operate without all warning labels clearly readable.

## SPECIFICATIONS

|                                  |                        |
|----------------------------------|------------------------|
| Machine Width                    | 32"                    |
| Renovation Width Per Pass        | 22"                    |
| Approx. Blade Spacing            | 1.6"                   |
| Number of Blades                 | 13 (8 teeth per blade) |
| Approx. Blade Depth              | Up to .5"              |
| Approx. Sq. Ft. Per Hour (Up to) | 27,500                 |
| Operating Speeds                 | Up to 3 MPH            |
| Available Speeds                 | 4 FWD + R + N          |
| Rear Tire Size/Type              | 13" x 5" Pneumatic     |
| Front Tire Size/Type             | 8" x 2.5" Pneumatic    |
| Seed Hopper Capacity             | 20# (60# Fertilizer)   |
| Shipping Weight                  | 410 lbs.               |
| Actual Machine Weight            | 305 lbs.               |
| Engine                           | Honda GX270 Series OHV |

## WARRANTY

LIMITED WARRANTY FOR TURFSAVR (engine excluded)

For two full years from date of purchase and first use, SourceOne will replace for the original purchaser free of charge any parts of the machine (excluding engine, hydrostat, tines and belts) found upon examination by SourceOne or its approved agent to be defective in material or workmanship or both. This is the exclusive warranty.

All expedited transportation charges on parts submitted for replacement must be borne by purchaser. For warranty service contact the dealer from whom you purchased machine or the factory in Lincoln, Nebraska which reserves the right to examine the machine and make its own evaluation at its option. THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM DATE OF PURCHASE. TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some jurisdictions do not allow limitations on how long an implied warranty lasts, and some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which may vary from jurisdiction to jurisdiction.

# SEED AND FERTILIZER HOPPER CALIBRATION CHART

## Start by ensuring that your spreader calibration is correct.

Make sure the holes in the bottom of the hopper are fully open when the Rate Control handle is on #30. If not, please adjust control cable or rod to allow for a full open hopper position at #30.

Look for EarthWay or Ev-N-Spred models on the fertilizer for settings. If there are none listed, please use the comparison chart below as a guide to estimate your spreader setting. These settings are approximate and intended as a guide only. Variations in physical characteristics of material applied, walking speed and surface roughness may require slightly different spreader settings.

Due to the above conditions, the manufacturer makes no warranty as to the uniformity of coverage actually obtained from settings listed.

### Drop Setting Matrix SQ/FT COVERAGE

| BAG WEIGHT | 5,000 LBS/1000 | 10,000 LBS/1000 | 15,000 LBS/1000 |
|------------|----------------|-----------------|-----------------|
| 5 LBS.     | 1.0            | 0.5             | 0.3             |
| 10 LBS.    | 2.0            | 1.0             | 0.7             |
| 15 LBS.    | 3.0            | 1.5             | 1.0             |
| 18 LBS.    | 3.6            | 1.8             | 1.2             |
| 20 LBS.    | 4.0            | 2.0             | 1.3             |
| 25 LBS.    | 5.0            | 2.5             | 1.7             |
| 30 LBS.    | 6.0            | 3.0             | 2.0             |
| 35 LBS.    | 7.0            | 3.5             | 2.3             |
| 40 LBS.    | 8.0            | 4.0             | 2.7             |
| 45 LBS.    | 9.0            | 4.5             | 3.0             |
| 50 LBS.    | 10.0           | 5.0             | 3.3             |

Example Bag Weight Chart to calculate the number of lbs. per 1,000 square feet.

### Fertilizer

PARTICLE SIZES  
LBS./1,000 Sq. Ft.



FINE/SMALL  
(SAND)



MEDIUM  
(HALF BB)



BIG (BB)

SETTING/  
SPREAD WIDTH

SETTING/  
SPREAD WIDTH

SETTING/  
SPREAD WIDTH

|         |          |          |          |
|---------|----------|----------|----------|
| 1 LB.   | 11 / 21" | 11 / 21" | 12 / 21" |
| 2 LBS.  | 13 / 21" | 13 / 21" | 13 / 21" |
| 3 LBS.  | 14 / 21" | 14 / 21" | 14 / 21" |
| 4 LBS.  | 16 / 21" | 16 / 21" | 15 / 21" |
| 5 LBS.  | 17 / 21" | 17 / 21" | 17 / 21" |
| 6 LBS.  | 18 / 21" | 18 / 21" | 18 / 21" |
| 7 LBS.  | 19 / 21" | 19 / 21" | 19 / 21" |
| 8 LBS.  | 20 / 21" | 20 / 21" | 20 / 21" |
| 9 LBS.  | 22 / 21" | 21 / 21" | 21 / 21" |
| 10 LBS. | 23 / 21" | 22 / 21" | 22 / 21" |

### Grass Seed

Fine   
SETTING/  
SPREAD WIDTH

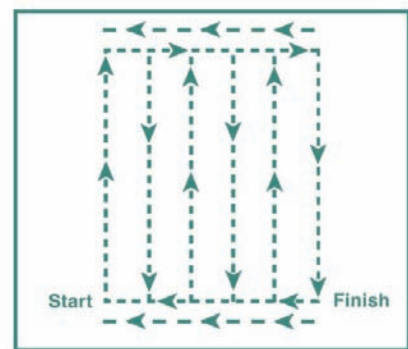
Coarse   
SETTING/  
SPREAD WIDTH

|        |    |    |
|--------|----|----|
| 2 LBS. | 17 | 13 |
| 3 LBS. | 14 | 14 |
| 4 LBS. | 16 | 15 |
| 5 LBS. | 17 | 17 |

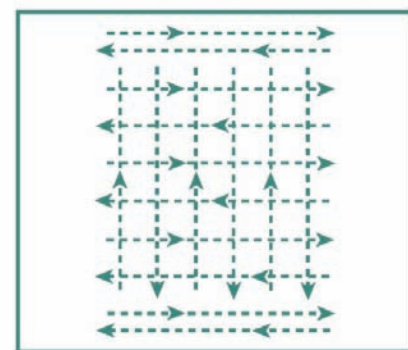


### SUGGESTED

### WALKING PATTERN



### HALF RATE SETTINGS



## **SAFETY INSTRUCTIONS** *Instrucciones de Seguridad*

Turf aerators are designed exclusively for the purpose of the improvement of turf grass by removing "plugs" of existing turf to allow the flow of nutrients, water and oxygen to the roots. Any other use is inadvisable and can cause serious injury or death. *Los aireadores de césped son diseñados exclusivamente con el objetivo de mejorar el césped removiendo los tapones existentes de hierba para permitir el flujo de sustancias nutritivas, agua y oxígeno a las raíces. Cualquier otro uso no es aconsejable y puede causar serias heridas o la muerte.*

### **DO HACER:**

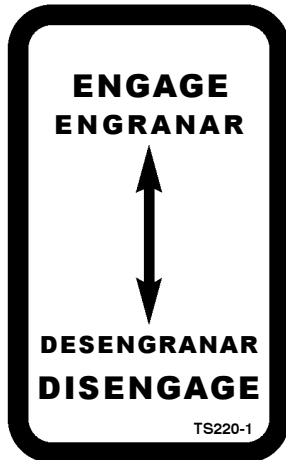
- Always follow operating instructions. *Siempre seguir las instrucciones de operación.*
- Operate only with the guard/cover in place. *Operar sólo con la cubierta/tapa en su lugar.*
- Wear protective equipment including hearing protection, eye shields and proper footwear. *Usar equipo de protección incluyendo protección auditiva, lentes protectores y artículos de calzado apropiados.*
- Read and heed all warning labels affixed to the machine. *Leer y prestar atención a las etiquetas de advertencia adjuntas a la máquina.*
- Remove spark plug wire when machine is not being used to prevent operation without instruction. *Quitar el alambre de bujía cuando la máquina no esté en uso para prevenir la operación sin instrucción.*
- Clear area to be dethatched, overseeded, or fertilized of all loose objects and all children. *Limpiar el área a ser ventilada de objetos sueltos y todos los niños.*
- Flag sprinkler heads and other hidden obstacles and holes. *Marcar las cabezas de los aspersores y otros obstáculos escondidos y agujeros.*
- Practice operation in an open area prior to operation in tight areas. *Practicar la operación en un área abierta antes de operar en áreas estrechas.*
- Keep hands and feet away from operating parts. *Mantener manos y pies fuera del alcance de las partes operadoras.*
- Use hearing protection. Tested noise levels range from 86.4dB(A)-89.5dB(A). *Usar protección auditiva. Niveles de ruido probados oscilan entre los 86.4 dB (A) hasta los 89.5 dB (A).*

### **DO NOT NO HACER:**

- Operate on severe slopes (exceeding 15°). *Operar sobre cuevas severas (excediendo 15°).*
- Allow children to operate or be within 50' of operation. *Permitir a niños operarlo o que estén dentro de 50' de la operación.*
- Operate without guard/cover attached. *Operar sin la tapa / cubierta puesta.*
- Operate when footing is unsure. *Operar cuando el equilibrio es inseguro.*
- Leave machine unattended while running. *Dejar la máquina desatendida mientras funciona.*
- Operate when dark or hard to see clearly. *Operar cuando está oscuro o difícil de ver claramente.*
- Override the safety shutoff switch. *Anular el interruptor de apagado de seguridad.*
- Lift guard/cover without positioning body to avoid lift injury. *Levantar la tapa/cubierta sin posicionar el cuerpo para evitar un herida de levantamiento.*
- Allow feet to be placed under the rear of machine. *Permitir que los pies sean colocados bajo el reverso de la máquina.*
- Operate without instructions. *Operar sin instrucciones.*
- Allow others to operate without access to instructions. *Permitir a otros su operación sin acceso a las instrucciones.*
- Operate without warning labels clearly readable. *Operar sin las etiquetas de advertencia claramente legibles.*

|                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|
| <p><b>NEVER ALLOW CHILDREN TO OPERATE POWER EQUIPMENT</b><br/><b>NUNCA PERMITIR A NIÑOS OPERAR EL EQUIPO DE PODER</b></p> |
|---------------------------------------------------------------------------------------------------------------------------|

# MACHINE LABELS *Etiquetas de la Máquina*



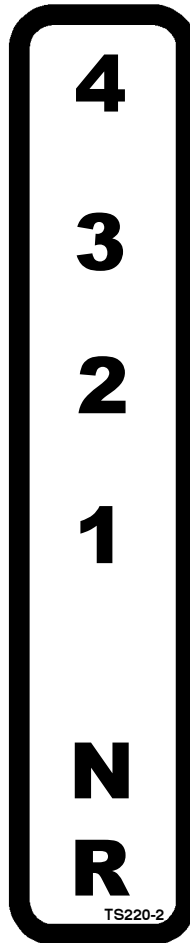
Blade Engagement



Danger: Hands and Feet



Shield



Speed Indicator



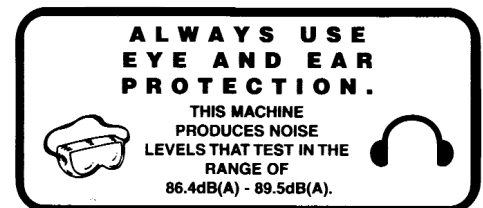
Warning: Shield



Warning: Hot



Pinch Point



Protective Equipment

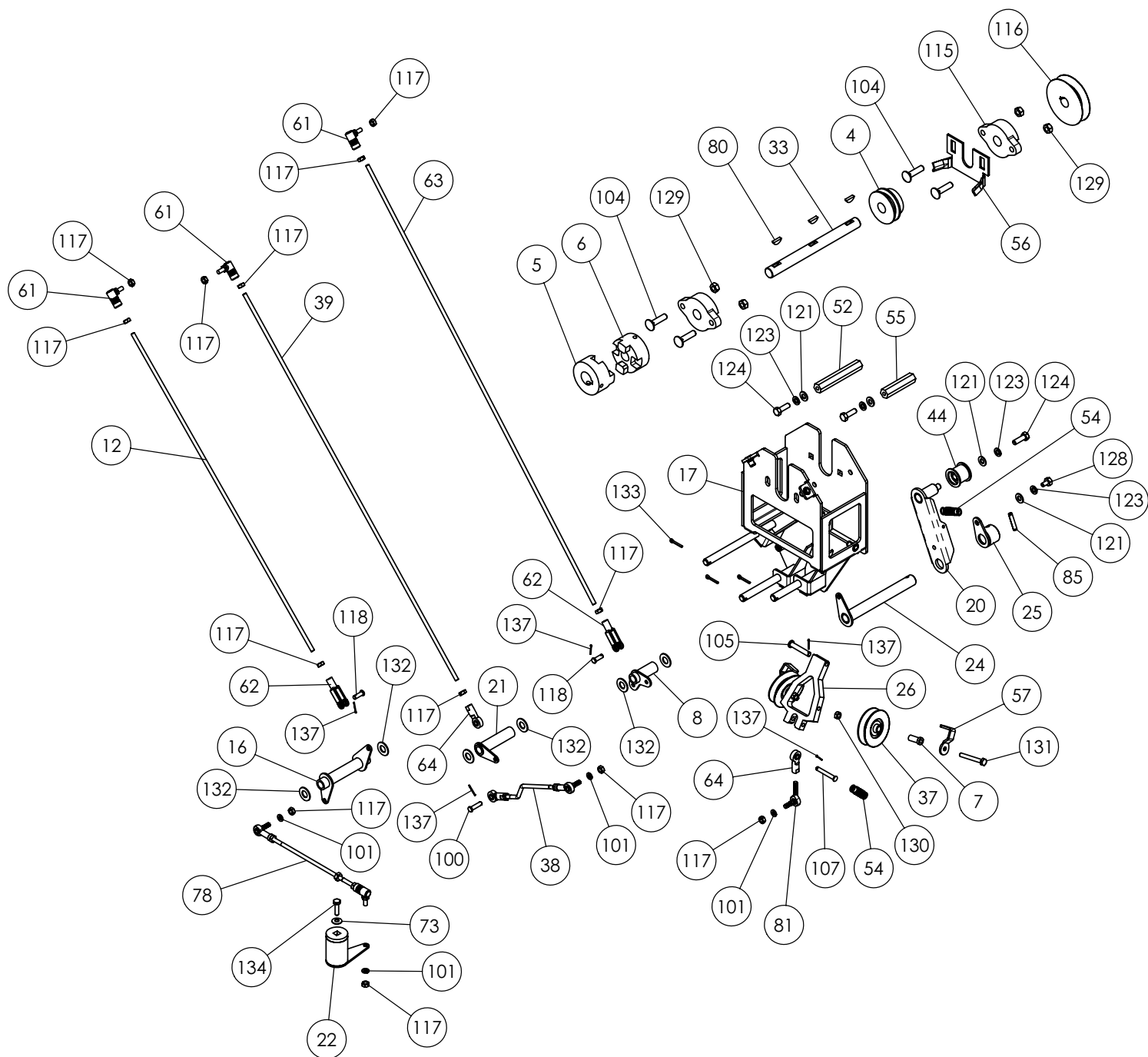
DO NOT OPERATE MACHINERY WITHOUT SAFETY LABELS. FREE REPLACEMENT LABELS ARE AVAILABLE UPON REQUEST BY CONTACTING SOURCEONE CUSTOMER SERVICE.

### Parts Diagram A for Model TS220

This exploded view diagram illustrates the assembly of a machine, likely a trencher or similar earth-moving equipment. The components are numbered 1 through 136. The diagram shows the engine (1) mounted on the frame (15), the transmission (27) and drive shaft (28) assembly, the rear wheel (50) and front wheel (95), the cutting tool (114) with its mounting bracket (113), and the side housing (3) with its cover (72). The diagram also shows the fuel tank (18) and the fuel line (19). The parts are arranged in an exploded view to show their relative positions and how they fit together.



## Parts Diagram B for Model TS220



## Parts List for Model TS220

|    |      |    |                                                    |     |      |    |                                                    |
|----|------|----|----------------------------------------------------|-----|------|----|----------------------------------------------------|
| 1  | 1387 | 1  | Shaft Cover                                        | 70  | 1465 | 2  | Oilite Flange Brg. 1" I.D. 1-1/4" O.D. x 3/4" Long |
| 2  | 1388 | 1  | Pulley Cover                                       | 71  | 1466 | 1  | Clevis Pin 5/16" dia x 2-5/8" Long                 |
| 3  | 1390 | 1  | Seed Box Bracket                                   | 72  | 1467 | 1  | Seed Box Cover                                     |
| 4  | 1391 | 1  | Transaxle Drive Pulley 3L 2-1/2" X 3/4 V-groove    | 73  | 1468 | 3  | Belleville Washer                                  |
| 5  | 1394 | 1  | Coupling Half (Engine)                             | 74  | 1471 | 1  | Rubber Debris Guard                                |
| 6  | 1220 | 1  | Coupling Half                                      | 75  | 1472 | 1  | Debris Guard Mounting Plate                        |
| 7  | 1395 | 2  | Bearing Spacer                                     | 76  | 1478 | 2  | Seedbox Drive                                      |
| 8  | 1396 | 1  | Rotary Power Bell Crank                            | 77  | 1006 | 1  | Hex Head Bolt, 1/4-20 UNC x 1 3/8"                 |
| 9  | 1398 | 1  | TurfSavr Deck                                      | 78  | 1474 | 1  | Transmission Rod Assy (lower)                      |
| 10 | 1399 | 1  | Axle Lift Assembly                                 | 79  | 1481 | 1  | GX240-270 Honda Engine                             |
| 11 | 1400 | 1  | Transmission Lever                                 | 80  | 1484 | 4  | Woodruff Key #9 3/16" X 3/4"                       |
| 12 | 1401 | 1  | Transmission Rod                                   | 81  | 1485 | 1  | Spherical Rod End 1/4-28 UNF R.H. (male w/stud)    |
| 13 | 1402 | 1  | Axle Pivot Shaft                                   | 82  | 1607 | 1  | R.H. Blade Cover                                   |
| 14 | 1403 | 1  | Pivot Shaft Lock                                   | 83  | 1603 | 1  | V-Belt TS220 Transaxle Drive                       |
| 15 | 1404 | 1  | Handle                                             | 84  | 1641 | 1  | Seed Box Cable                                     |
| 16 | 1405 | 1  | Transmission Bell Crank                            | 85  | 1490 | 1  | Coiled Spring Pin 1/4" x 1-1/4"                    |
| 17 | 1406 | 1  | Modular Controls Bracket                           | 86  | 1491 | 1  | Coiled Spring Pin 5/16" x 1-1/2"                   |
| 18 | 1407 | 1  | Clutch Lever Assembly                              | 87  | 1615 | 24 | Flail Blade Spacer                                 |
| 19 | 1408 | 1  | Controls Plate Assembly                            | 88  | 1613 | 2  | Flail Blade Shaft Spacer                           |
| 20 | 1409 | 1  | Blade Drive Belt Tensioner                         | 89  | 1494 | 28 | Flail Blade                                        |
| 21 | 1410 | 1  | Belt Tensioner Bell Crank                          | 90  | 1495 | 4  | Flail Blade Shaft                                  |
| 22 | 1411 | 1  | Transmission Lever                                 | 91  | 1496 | 4  | Flail Blade Half Spacer                            |
| 23 | 1128 | 4  | Hex Head Bolt, 3/8-16 UNC x 1 3/4"                 | 92  | 1497 | 8  | 1/8" x .875 Spring Pin                             |
| 24 | 1413 | 1  | Belt Tensioner Shaft                               | 93  | 1492 | 3  | Flail Blade Hub                                    |
| 25 | 1414 | 1  | Belt Tensioner Shaft Lock                          | 94  | 1532 | 2  | Key 3/16" x 3"                                     |
| 26 | 1415 | 1  | Pulley Bracket Idler                               | 95  | 1533 | 2  | E-Clip 3/4 Shaft Spring Steel                      |
| 27 | 1416 | 1  | Elevation Ratchet                                  | 96  | 1690 | 1  | Belt Guide                                         |
| 28 | 1417 | 1  | Ratchet Spacer                                     | 97  | 1614 | 2  | 10-24 UNC X 1/2" Socket Head Cap Screw             |
| 29 | 1418 | 1  | Ratchet Lever Lock                                 | 98  | 1691 | 1  | Seed Gerator Shaft                                 |
| 30 | 1419 | 1  | Over Seeder Control Plate                          | 99  | 1962 | 1  | Seed Gerator Control Lever                         |
| 31 | 1420 | 1  | Over Seeder Control Lock                           | 100 | 1345 | 1  | Clevis Pin, 1/4 x 1                                |
| 32 | 1421 | 1  | Belt Tensioner Lever                               | 101 | 1182 | 6  | Split Lock Washer, 1/4                             |
| 33 | 1422 | 1  | Drive Shaft                                        | 102 | 1540 | 4  | Cap Screw, 3/8-16 UNC x 1 - 1/4"                   |
| 34 | 1003 | 2  | Rubber Latch Kit                                   | 103 | 1541 | 2  | Setscrew, 5/16-18 UNC x 1"                         |
| 35 | 1424 | 1  | Seed Gerator (Overseeder)                          | 104 | 1542 | 4  | Carriage Bolt, 3/8-16 UNC x 1-1/4"                 |
| 36 | 1553 | 1  | Setscrew, 5/16-18 UNC x 1-1/2"                     | 105 | 1543 | 1  | Clevis Pin 5/16 dia x 1-3/4" Long                  |
| 37 | 1426 | 2  | V-Type Idler, 2-5/8" dia                           | 106 | 1544 | 4  | Hex Head Bolt, 5/16-18 UNC x 2"                    |
| 38 | 1427 | 1  | Belt Tensioner Rod Assy (Lower)                    | 107 | 1545 | 1  | Clevis Pin, 1/4 x 1-5/8"                           |
| 39 | 1428 | 1  | Turnbuckle Arm Belt Tensioner                      | 108 | 1546 | 4  | 1/4" x 3/4" Long Self Tapping Screw                |
| 40 | 1429 | 12 | Blade Spacer                                       | 109 | 1550 | 2  | Hex Bolt 1/2-13 UNC x 3-1/2"                       |
| 41 | 1430 | 13 | Blade                                              | 110 | 1551 | 2  | Setscrew 1/2-13 UNC x 1/2                          |
| 42 | 1432 | 1  | Blade Drive Pulley 3.95" X 3/4" Bore               | 111 | 1552 | 3  | Setscrew 1032-UNF x 1/2"                           |
| 43 | 1433 | 1  | Transaxle Drive Pulley 7" X 5/8" Bore              | 112 | 1044 | 4  | Flat Washer 3/8"                                   |
| 44 | 1434 | 1  | Blade Drive Belt Idler (Flat) 1-1/2" w / 3/8" Bore | 113 | 1554 | 2  | Hex Jam Nut, 1-14                                  |
| 45 | 1435 | 2  | Hair Pin Cotter .178 x 3-3/4"                      | 114 | 1555 | 1  | Shaft Blade                                        |
| 46 | 1436 | 1  | Spring Ratchet Lever Lock                          | 115 | 1232 | 4  | Flange Cartridge Bearing, 3/4"                     |
| 47 | 1437 | 2  | Spacer Transaxle                                   | 116 | 1018 | 1  | Pulley, Engine                                     |
| 48 | 1438 | 2  | Flat Washer 3/4"                                   | 117 | 1243 | 13 | Hex Nut, 1/4-28 UNF                                |
| 49 | 1439 | 2  | Wheel, 8.5"                                        | 118 | 1077 | 2  | Clevis Pin, 1/4" x 3/4"                            |
| 50 | 1440 | 2  | Wheel, 13"                                         | 119 | 1188 | 12 | Hex Head Bolt, 5/16-18 UNC x 3/4"                  |
| 51 | 1441 | 1  | Transaxle                                          | 120 | 1072 | 6  | Lock Nut, Nylock, 5/16-18 UNC                      |
| 52 | 1442 | 1  | Pulley Cover Standoff (upper)                      | 121 | 1015 | 24 | Flat Washer, 5/16"                                 |
| 53 | 1443 | 1  | Pulley Cover Standoff (lower)                      | 122 | 1143 | 4  | Hex Head Bolt, 5/16-18 UNC x 1 1/2"                |
| 54 | 1222 | 2  | Throttle Return Spring                             | 123 | 1504 | 18 | Lock Washer, 5/16"                                 |
| 55 | 1444 | 1  | Belt Guide Shaft                                   | 124 | 1184 | 3  | Hex Bolt, 5/16-18 UNC x 1"                         |
| 56 | 1516 | 1  | Belt Guide Transaxle Idler                         | 125 | 1181 | 9  | Hex Bolt, 1/4-20 UNC x 1/2"                        |
| 57 | 1446 | 2  | Belt Guide Transaxle Drive                         | 126 | 1091 | 8  | Flat Washer, 1/4"                                  |
| 58 | 1447 | 1  | Drive Belt Guide Lower                             | 127 | 1250 | 8  | Lock Washer, 3/8"                                  |
| 59 | 1448 | 1  | Lock Washer Blade Shaft                            | 128 | 1241 | 2  | Hex Head Bolt, 5/16-18 x 1/2"                      |
| 60 | 1449 | 1  | Drive Belt                                         | 129 | 1179 | 4  | Lock Nut, 3/8-16 UNC                               |
| 61 | 1450 | 3  | Q-D Rod End 1/4-28 UNF R.H.                        | 130 | 1029 | 3  | Nylock Nut, 1/4-20 UNC                             |
| 62 | 1451 | 2  | Rod End Yoke 1/4-28 UNF R.H.                       | 131 | 1333 | 2  | Hex Bolt, 1/4-20 UNC x 2"                          |
| 63 | 1452 | 1  | Transaxle Belt Tensioner Rod (upper)               | 132 | 1329 | 6  | Flat Washer, 1/2"                                  |
| 64 | 1453 | 2  | Spherical Rod End 1/4-28 UNF R.H. (female)         | 133 | 1523 | 4  | Cotter Pin, 1/8" dia x 1"                          |
| 65 | 1592 | 3  | SHCS, 10-32 UNF x 0.5"                             | 134 | 1267 | 1  | Hex Bolt, 1/4-20 UNC x 1"                          |
| 66 | 1460 | 2  | Bearing Saver                                      | 135 | 1244 | 2  | Lock Nut, 1/4-20 UNC                               |
| 67 | 1462 | 1  | Earthway Drop Seeder/Spreaders                     | 136 | 1252 | 3  | Hex Head Bolt, 1/4-20 UNC x 3/4"                   |
| 68 | 1463 | 2  | Ball Knob                                          | 137 | 1031 | 5  | Cotter Pin, 1/16" dia x 3/4"                       |
| 69 | 1464 | 2  | Oilite Flange Brg. 3/4" I.D. 7/8" O.D. x 1/2" Long |     |      |    |                                                    |